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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/605,812	06/28/2000	Steven R. Chalmer	EMS-00801	5356

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PATENT GROUP
CHOATE, HALL & STEWART
EXCHANGE PLACE, 53 STATE STREET
BOSTON, MA 02109

EXAMINER	
SHAH, NILESH R	
ART UNIT	**PAPER NUMBER**
2127	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/605,812	Applicant(s) CHALMER ET AL.	
	Examiner Nilesh R Shah	Art Unit 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/28/00* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Perotto et al (5,630,130) (hereinafter Perotto)

3. As per claim1, Perotto teaches a method of providing one of a plurality of schedulers for a multitasking system for a processor, comprising:

choosing a particular one of the schedulers (col. 2 lines 35-65) ('characterized in that said microprocessor further comprises a scheduler realized in hardware for controlling the use of said microprocessor by said processes, and program counter storage means for storing N program counters each for use by said scheduler to control the instruction sequence of a separate one of said N processes, so that said scheduler is able select a different one of said program counters when the task processed by said microprocessor is changed without requiring the transfer of data from said data storage means.');

setting a program counter to an address corresponding to code of the particular one of the schedulers (col. 4 lines 1-65) ('The scheduler 7, in this example, is therefore always pointing to the task P0. At initialization, the stack-pointer 9 is set to point to the address at which the program counter Pc0 is stored. The execution of a branch control instruction, such as a CALL instruction, causes a series of instructions stored in the ROM 2 to be initiated as a sub-routine from within the task P0.') ; and

the processor executing code at an address corresponding to the program counter (col. 4 lines 1-65) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

4. As per claim 2, Perotto teaches a method further comprising of setting a stack pointer to an address corresponding to stack space for the particular one of the schedulers and the processor using the stack space at the stack pointer after executing code at the address corresponding to the program counter. (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

5. As per claim 3, Perotto teaches a method wherein all of the schedulers use the same stack (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

6. As per claim 4, Perotto, teaches a method wherein choosing a particular one of the schedulers is based on parameters that vary according to run time conditions (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

7. As per claim 5, Perotto teaches a method wherein at least one of the schedulers is for statistical code profiling (col. 7 lines 1-51) ('When a sub-routine is initiated in such a task, the address from which the sub-routine was initiated is firstly augmented to indicate the return address following the branch control instruction at which the task will

recontinue when the sub-routine has ended. The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued')

8. As per claim 6 Perotto teaches a method wherein a first one of the schedulers is for start up conditions and a second one of the schedulers is for steady state operation (col. 8 lines 1-55) (Each event group signal thus produced is sent to the event router 8 which produces a task request signal corresponding to one of the task P0, P1, P2 or P3, depending upon the configuration of the event router 8. Each task request signal is able to have either an active state, indicating the presence of one or more events directed towards a particular task, or an inactive state, indicating that no event directed towards that task is present.')

9. As per claim 7, Perotto teaches a method wherein swapping in one of the plurality of schedulers is performed by setting up a return from an exception that causes the one scheduler to execute (col. 8 lines 1-55) (Each event group signal thus produced is sent to the event router 8 which produces a task request signal corresponding to one of the task P0, P1, P2 or P3, depending upon the configuration of the event router 8. Each task request signal is able to have either an active state, indicating the presence of one or more

events directed towards a particular task, or an inactive state, indicating that no event directed towards that task is present.').

10. As per claim 8, Perotto teaches method wherein setting a program counter includes modifying a variable that is modified according to the particular one of the schedulers that is chosen (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

11. As per claim 9, Perotto teaches a method of scheduling tasks in a multitasking operating system comprising: choosing a particular one of a plurality of schedulers; and running the particular scheduler to schedule tasks (col. 2 lines 35-65) ('characterized in that said microprocessor further comprises a scheduler realized in hardware for controlling the use of said microprocessor by said processes, and program counter storage means for storing N program counters each for use by said scheduler to control the instruction sequence of a separate one of said N processes, so that said scheduler is able select a different one of said program counters when the task processed by said microprocessor is changed without requiring the transfer of data from said data storage means.')

12. As per claim 10 Perotto teaches a method wherein choosing a particular one of the plurality of schedulers is performed by setting up a return from an exception that causes that causes the one scheduler to execute (col. 2 lines 35-65) ('characterized in that said microprocessor further comprises a scheduler realized in hardware for controlling the use of said microprocessor by said processes, and program counter storage means for storing N program counters each for use by said scheduler to control the instruction sequence of a separate one of said N processes, so that said scheduler is able select a different one of said program counters when the task processed by said microprocessor is changed without requiring the transfer of data from said data storage means.') (col. 4 lines 1-65) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.'

13. As per claim 11 Perotto teaches a method wherein running the particular one of the schedulers includes setting a program counter to an address corresponding to code of the particular one of the schedulers (col. 4 lines 1-65) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is

finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.'

14. As per claim 12, Perotto teaches a method wherein setting a program counter includes modifying a variable that is modified according to the particular one of the schedulers that is chosen (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

15. As per claim 13, Perotto teaches a method further comprising of setting a stack pointer to an address corresponding to stack space for the particular one of the schedulers and the processor using the stack space at the stack pointer after executing code at the address corresponding to the program counter (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

16. As per claim 14 Perotto teaches method wherein all of the schedulers use the same stack (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.')

17. As per claim15, Perotto teaches a method wherein choosing a particular one of the schedulers is based on parameters that vary according to run time conditions (col. 7 lines 1-51) ('The value of the stack-pointer 9 is then adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued.').

18. As per claim 16, Perotto teaches a method wherein at least one of the schedulers is for statistical code profiling (col. 7 lines 1-51) ('When a sub-routine is initiated in such a task, the address from which the sub-routine was initiated is firstly augmented to indicate the return address following the branch control instruction at which the task will recontinue when the sub-routine has ended. The value of the stack-pointer 9 is then

adjusted to point to one of the unused program counters (Pc1, Pc2 or Pc3). During the execution of the sub-routine, this previously unused program counter keeps track of the instructions executed in the sub-routine. When the execution of the sub-routine is finished, the stack-pointer 9 is readjusted to again point to the program counter Pc0 and the execution of the task is continued')

19. As per claim 17, Perotto teaches a method wherein a first one of the schedulers is for start up conditions and a second one of the schedulers is for steady state operation (col. 8 lines 1-55) (Each event group signal thus produced is sent to the event router 8 which produces a task request signal corresponding to one of the task P0, P1, P2 or P3, depending upon the configuration of the event router 8. Each task request signal is able to have either an active state, indicating the presence of one or more events directed towards a particular task, or an inactive state, indicating that no event directed towards that task is present.')

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh R Shah whose telephone number is 703-305-8105. The examiner can normally be reached on Monday-Friday 8am-4pm.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Grant can be reached on 703-3058-1108. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

NS

10/10/03

MAJID BANKHAH
PRIMARY EXAMINER